

REMARKS

The present application was filed on January 30, 2004 with claims 1-20. Claims 18-20 were withdrawn from consideration in response to a Restriction Requirement dated October 13, 2004. In the outstanding Office Action dated January 6, 2005, the Examiner has: (i) rejected claims 1-5, 11, 13 and 14 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,489,881 to Aleksandravicius et al. (hereinafter “Aleksandravicius”); (ii) rejected claim 12 under 35 U.S.C. §103(a) as being unpatentable over Aleksandravicius in view of U.S. Patent No. 5,872,504 to Greitschus et al. (hereinafter “Greitschus”); and (iii) indicated that claims 6-10 and 15-17 are allowable.

In this response, claims 18-20 have been canceled without prejudice as being drawn to a non-elected invention. Applicants request an acknowledgment of the receipt of formal drawings filed on March 29, 2004. Applicants traverse the §102(b) and §103(a) rejections for at least the reasons set forth below. Applicants respectfully request reconsideration of the present application in view of the following remarks.

Claims 1-5, 11, 13 and 14 stand rejected under 35 U.S.C. §102(b) as being anticipated by Aleksandravicius. With regard to independent claims 1 and 13, which are of similar scope, the Examiner contends that Aleksandravicius discloses each of the elements set forth in the subject claims. Applicants respectfully disagree with this contention. In rejecting claims 1 and 13, the Examiner relies primarily on FIG. 9 and the disclosure at column 3, lines 55-60 of Aleksandravicius. Aleksandravicius is directed to a high current sense resistor and a semiconductor process for making same. The sense resistor is configured to handle currents up to 100 Amperes (Aleksandravicius; column 3, lines 51-53) and to “ensure high accuracy of a nominal value of resistance” (Aleksandravicius; column 4, lines 28-29).

Claims 1 and 13 are clearly distinguishable from the Aleksandravicius reference. Specifically, with reference to FIG. 9 of Aleksandravicius, assuming that the two terminals T1 and T2 can be analogized to the “first and second conductive terminals electrically connected to the resistor body at opposite ends thereof,” set forth in claim 1, and that the wire bonds 50, 51 and 52 can be analogized to the “at least first and second conductive paths between at least one of the first and second conductive terminals and the resistor body,” recited in claim 1 (see, e.g.,

Aleksandravicius; column 5, lines 29-31), Aleksandravicius fails to teach or remotely suggest the limitation that “at least one conductive terminal is configured such that a resistance of the at least one conductive terminal between the at least first and second conductive paths is substantially matched to a resistance of the resistor body between the at least first and second conductive paths,” as recited in claims 1 and 13.

In contrast to the claimed invention, Aleksandravicius is completely silent as to varying a resistance of the conductive paths (e.g., wire bonds 50, 51, 52) associated with one or both conductive terminals (e.g., T1) so as to substantially match a resistance of the resistor body (e.g., 60, 61, 62) between the first and second conductive paths, as explicitly required by claims 1 and 13. In fact, Aleksandravicius fails to provide any disclosure at all relating to the resistance of the resistor body between any two given conductive paths corresponding to the first and/or second conductive terminal.

The Examiner provides a different interpretation of the elements disclosed in Aleksandravicius. Specifically, the Examiner seems to analogize the first and second conductive terminals recited in claim 1 with elements 60 and 62 (Office Action; page 2, last paragraph), although it is quite clear from the disclosure of Aleksandravicius that 60 and 62 define portions of the same resistor body, rather than terminals for providing electrical connection to the resistor body. Furthermore, the Examiner seems to erroneously interchange his definitions for the resistor body and terminals. For example, beginning on the last line of page 2 of the present Office Action, the Examiner states that “the resistance is substantially or exactly matched since it is the same material and the same length along the terminal 60 as along the resistor body 60, 61” (emphasis added). As required by claims 1 and 13, these two elements, namely, the first and second conductive terminals and the resistor body, are separate and distinct from one another. The Examiner also appears to inaccurately use the word “termination” synonymously with the word “terminal,” while in fact Aleksandravicius clearly treats the two terms as separate entities, the former term being represented as resistive layer 30 and the latter term being represented as elements T1 or T2, as depicted in FIG. 9.

Aleksandravicius states that “the pattern shown in FIG. 9 defines three series resistor regions 60, 61 and 62, termed R1, R2 and R3” (Aleksandravicius; column 5, lines 41-43; emphasis added).

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Moreover, Aleksandravicius clearly defines elements T1 and T2 as conductive terminals connected to the resistor body. Aleksandravicius states that “[t]erminals T1 and T2 are connected to the short wide sections 60 and 62” (Aleksandravicius; column 5, lines 43-44). The conductive terminals, as defined by the present specification, are preferably comprised of a conductive material having a resistivity that is significantly lower compared to the resistivity of the resistor body itself (specification; page 8, lines 13-17), and are thus distinguishable from the resistor body.

The present invention seeks to reduce the possibility for electromigration to occur in the resistor by providing a resistor structure wherein respective portions of current flowing through two or more conductive paths between at least a given one of the conductive terminals and the resistor body are substantially matched to one another “so as to generate a uniform current distribution in the resistor” (specification; page 8, lines 23-27). A major consideration of the resistor arrangement taught by Aleksandravicius, by contrast, is to ensure high accuracy of a nominal value of resistance (Aleksandravicius; column 4, lines 27-29). The resistor taught by Aleksandravicius is thus directed to an entirely different problem compared to that of the claimed invention.

For at least the above reasons, Applicants assert that claims 1 and 13 are patentable over the prior art. Accordingly, favorable reconsideration and allowance of these claims are respectfully solicited.

With regard to claims 2-5 and 11, which depend from claim 1, and claim 14, which depends from claim 13, Applicants submit that these claims are also patentable over the prior art of record by virtue of their dependency from their respective base claims, which are believed to be patentable for at least the reasons set forth above. Moreover, one or more of these claims define additional patentable subject matter in their own right. For example, claims 4 and 14 further define at least a given one of the first and second conductive paths as comprising “a resistive element connected between the at least one conductive terminal and the resistor body, the resistive element having a resistance associated therewith that is substantially equal to the resistance of the resistor body between the at least first and second conductive paths.” The prior art fails to teach or suggest such a feature.

In addressing claim 4, the Examiner contends that “the whole piece of metal is a resistive element that includes terminals that are one piece with same” (Office Action; page 3, first

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paragraph). Applicants respectfully disagree with this contention and assert that Aleksandravicius fails to disclose a resistive element connected between at least one conductive terminal (e.g., T1) and the resistor body (e.g., 60). Even assuming, *arguendo*, that the wire bond itself may be considered to be the “resistive element” recited in claims 4 and 14, Aleksandravicius fails to disclose that the resistive element has a resistance associated therewith that is selected to be substantially equal to the resistance of the resistor body between the first and second conductive paths, as required by claims 4 and 14. Therefore, Applicants submit that claims 2-5, 11 and 14 are believed to be patentable over the prior art of record, not merely by virtue of their dependency from their respective base claims, but also in their own right. Accordingly, favorable reconsideration and allowance of claims 2-5, 11 and 14 are respectfully requested.

Claim 12 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Aleksandravicius in view Greitschus. The Examiner contends that Aleksandravicius discloses the invention set forth in claim 12, except for the materials, but further contends that Greitschus discloses the semiconductor material (Office Action; page 3, last paragraph to page 4, first paragraph). Applicants respectfully disagree with this contention. Without characterizing the Greitschus reference, however, Applicants submit that claim 12, which depends from claim 1, is also patentable over the prior art of record by virtue of its dependency from claim 1, which is believed to be patentable for at least the reasons set forth above. Accordingly, favorable reconsideration and allowance of claim 12 are respectfully solicited.

With regard to claims 6-10 and 15-17, the Examiner states that these claims “would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. §112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims” (Office Action; page 3, second paragraph). However, Applicants note that there does not appear to be any §112 rejections of claims 6-10 and 15-17 in the present Office Action. Accordingly, Applicants respectfully request a clarification and/or correction of this statement.

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In view of the foregoing, Applicants believe that pending claims 1-17 are in condition for allowance, and respectfully request withdrawal of the §102 and §103 rejections.

Respectfully submitted,



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